

White Paper Report

Report ID: 104693

Application Number: PF-50176-11

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Institution: University of Texas, Arlington

Reporting Period: 9/1/2011-8/31/2015

Report Due: 11/30/2015

Date Submitted: 12/2/2015

WHITE PAPER

PF-50176-11

Creating Cold Storage Vault to Preserve Archival Collections Related to Texas History

**Project Director: Brenda S. McClurkin, C.A.
University of Texas at Arlington**

November 30, 2015

Narrative Description:

Background of the Project:

The University of Texas at Arlington Libraries Special Collections specializes in historical materials relating to Texas; the U.S. War with Mexico (1846-1848); the cartographic history of Texas and the Gulf of Mexico; and Mexico from 1810 to 1920. It also houses the university archives and archival collections relating to Texas labor and politics. Its collections include more than 50,000 volumes, over 9,000 linear feet of manuscript and archival collections, an estimated 10,000 historical maps, more than 5,000,000 photographic prints and negatives, and thousands of items in other formats. UT Arlington's Special Collections form the premiere repository of photographs in the northern half of Texas and one of the largest in the nation. It is the repository of last resort for some research subjects not duplicated by other repositories in Texas or elsewhere. Photographs range in date from the late 1840s to the present. Basically all formats, from daguerreotypes to digital files, are represented in the collections.

Special Collections' photographic holdings constitute irreplaceable documentation of Texas culture and history and of the natural and built environments of the Dallas-Fort Worth Metroplex. The largest and most heavily used collection is the photographic morgue of the *Fort Worth Star-Telegram*, a newspaper covering issues of national and international scope. The only extant major newspaper photo morgue publicly available in a wide geographic area, the *Star-Telegram* collection is comprised of a 70+ year run of negatives and prints which document historic as well as day-to-day activities of a dynamic and growing city with strong roots in cattle, railroads, oil, civilian and military aviation, politics, and the arts. It is enhanced by the W.D. Smith and Squire Haskins commercial photography collections, which document the vibrant built environment and growth experienced in both Fort Worth and Dallas. These are the largest of our more than 40 disparate photo collections, each of which has its own focus and subject specialty.

UT Arlington's photograph collections have been used to support both academic inquiry and popular culture pursuits. Our images have appeared in books, textbooks, articles, television programs, videos, websites, exhibits, educational classes, and presentations, enriching the public in general and our patrons individually by providing them with access to irreplaceable images that capture a visceral sense of history and community that would be impossible to achieve through only the written word. Their role in support of the humanities has been, is, and will continue to be invaluable.

Existing Negative Storage Environment:

The photographic negatives have been stored in substandard environmental conditions. Average temperature and humidity readings in Special Collections' archives storage area have averaged 70° F and 39% RH, two degrees higher than what the Image Permanence Institute's *IPI Storage Guide for Acetate Film* defines as room temperature and identifies as "likely to cause significant damage." Inadequate control of temperature and humidity in

storage areas has caused physical degradation of negatives and threatens those not yet affected. Degraded negatives rapidly become unusable because the image-bearing layer separates from its carrier, meaning that an affected negative no longer will reproduce an undamaged image. Vinegar syndrome and other signs of physical deterioration have been documented in the *Star-Telegram* collection in negatives created as late as the 1950s and also have been observed in the W. D. Smith and Squire Haskins collections. Degradation is a problem in any collection, but because Special Collections' negative holdings are so large the amount of degradation to be addressed is staggering.

Photo conservator Sarah Wagner, in her August 2010 *Preservation Report for the Negative Archives* estimated that 45% (2.025 million) of the *Fort Worth Star-Telegram's* 4.8 million negatives are degrading. 2010 A-D Strip testing indicated that all of the 1930s negatives (approximately 12,000) have reached the critical stage, where shrinkage and warping is imminent if not already visible, and should be frozen and reformatted immediately. In addition, 68.75% of the 1940s negatives (36,000) are in poor condition and are actively degrading, with freezing and copying recommended. As Wagner stated in 2010, "*At the current documented rate of rapid deterioration, assume 10-20% of the films 70-90 years old will become unusable in the next 5-10 years, and a similar quantity each decade going forward.*" Although rehousing negatives in individual acid-free envelopes or four-flap enclosures is traditionally recommended as best practice, probably 99% of the negatives remain housed in their original acidic manila negative envelopes as they arrived from the *Star-Telegram*. Highly acidic newspaper clippings reside inside the envelopes with the negatives.

Preservation Challenges Addressed by the Project:

An environment of inappropriate and fluctuating temperatures and humidity, along with storage in inappropriate materials, is shortening significantly the useful life of UT Arlington's photographic research resources. It is estimated that prints exist for less than 5% of our negatives. Rehousing alone is unfeasible because of the size of the problem and would not be a complete remedy in any case. As advised by our consultants, construction of a cold storage vault was the most cost effective measure to address the storage, stabilization, and preservation of the negatives. It would ensure that they remain available for generations to come.

According to the *IPI Storage Guide for Acetate Film*, under current storage conditions (70°F and 40% RH), the time to onset of vinegar syndrome for a fresh triacetate negative is 50 years. At the same level of humidity, storage at 40° delays the onset of vinegar syndrome to 450 years, while lowering the storage temperature to 30° extends it to 1,000 years, clearly illustrating the beneficial effects of reduced storage temperatures. Even for the negatives that already exhibit signs of degradation, the *IPI Guide* indicates that the approximate time for the free acidity of the negatives to double would be reduced from 5 years (at 70°F/50% RH) to 110 years (at 30°F/50% RH).

Cold storage also retards deleterious chemical interactions between poor enclosures and photographs. Wagner noted that "Individual buffered paper enclosures do facilitate

retrieval, organization, and physical control while providing some benefit at room temperature storage by separating acidic film from itself. [But rehousing] with buffered paper enclosures has *negligible* impact on the *extended* film base longevity compared to cold, dry storage.” Therefore “replacement of old *“envelopes is not required with cold storage, saving substantial material and labor costs plus additional space needs/costs due to increased bulk.”* Special Collections staff estimated that rehousing the Fort Worth Star-Telegram collection alone would expand its size by 3 to 5 times and take an estimated 200 years to complete. Furthermore, Wagner stated that the process of rehousing can have its own harmful consequences: *“The act of re-housing does “air out” films with an associated short-term drop in acidity. BUT this also causes a well-known effect whereby the aired film spontaneously buckles and channels within hours of being removed from its original enclosure.”* This was borne out in a small, short-lived pilot project to rehouse 1930s Star-Telegram negatives in four-flap enclosures.

Wagner also discounted another preservation alternative for the negatives--reformatting through digitization or traditional duplication. *“Replacement (reformatting) costs are exorbitant compared to long term maintenance in cold storage.”* Using a cost of \$20 per item per scan, Wagner estimated the cost of digitizing the entire Star-Telegram collection at \$97 million over a 25-30 year period.

Even digitizing the older, more acidic 4x5 negatives from the Star-Telegram and other comparable collections (an estimated 520,000 negatives) would exceed \$10 million and take at least 5 years, while segregating only the most deteriorated 50,000 to 100,000 negatives would cost up to \$2 million and take at least 3 years. Consultant William Lull confirmed Wagner's assessment in his *Consultation Report and Conservation Environment Program for New Cold Storage at the UT Arlington Library*. In his "Fugitive Media Reformat Cost Analysis" coupled with his *IPI Acetate Film Guide Analysis*, Lull calculated the cost to reformat Special Collections' negatives at \$108,000,000 and estimates that the avoided wholesale reformatting cost afforded by the construction of a cold storage vault would result in an annual cost savings of \$3,677,160.

While digitization is not the salvation of the negatives, it is an important component of future access to them. Stabilizing the collections by instituting cold storage would permit them to survive until their digitization can be planned with greater effectiveness. It would ultimately enable a selective approach to digitization in conjunction with collection development priorities, program initiatives, and emerging research needs and interests. The time bought by stabilization of the negatives through cold storage would permit the development of creative initiatives and solutions such as a scan on demand approach wherein handling of negatives can be limited, both enabling preservation and providing a platform for a structured and phased approach to digitization.

The enormity of our collections plus the fact that the negatives are heavily used on a daily basis meant that a room-sized cold storage vault was a must. The consultant reports made

us aware of *how* to best extend the life of our negatives to the maximum and position UT Arlington to move forward at last toward the actual construction of a cold storage vault. The key points made in the consultants' reports were:

- ❖ Cold storage is the most cost-effective preservation strategy for the UT Arlington black-and-white and color film archives.
 - Costs to reformat UT Arlington negatives by digitization or traditional duplication would exceed \$3 million per year and can be averted.
 - Rehousing film collections in archival enclosures will not be required, saving substantial material, labor and storage costs.
 - Cold storage will dramatically retard the deterioration of the negatives and allow time for selective digitization to proceed in a carefully planned fashion in targeted phases.
- ❖ The UT Arlington cold storage vault should be comprised of two vaults and an office space.
 - Office: Room temperature conditions to be maintained at 65-68°F and 30-40% RH.
 - Vault A (Intermediate Cool Storage): Temperature is to be maintained at 55°F with relative humidity of 30-40% (time-weighted 35%).
 - Vault B (Cold Storage): Temperature will be time-weighted 35°F; relative humidity will range between 25-35%, with time weighted average at 30% RH.
 - The ideal location for the vault is Rooms B05 and B06 in the basement of the Central Library building.
- ❖ UT Arlington should retain the services of a registered architect and/or professional consulting HVAC engineer to design the project.
- ❖ The project should provide cooling, humidification, positive dehumidification, fine particulate control, effective air distribution, good system operation and reliability, and control of gaseous pollutants.
- ❖ Architectural, lighting and plumbing characteristics in the design specifications will complement the environmental goals of protecting the collections.

2010 NEH Grant Application:

In December 2010, The University of Texas at Arlington Libraries requested \$400,000 over a two-year period from the National Endowment for the Humanities' Sustaining Cultural Heritage Collections program to support the construction of a cold storage vault to stabilize and preserve its photographic negatives. The estimated total direct construction cost of the cold storage vault as initially planned was \$950,197. (Adding indirect costs, not assessed to the NEH grant support, the total project cost was estimated at \$1,420,544.) Project staff included Ann Hodges, Program Coordinator for Special Collections and Project Director; Brenda McClurkin, Historical Manuscripts Archivist; Cathy Spitzenberger, Library Assistant for Photographs; Carleen Dolan, Administrative Manager; Larry Harrison, University Director of Facilities Management; Leonard Bode, University Air Conditioning Supervisor; Nicholas Schroeder, Campus Facilities Engineer; and two student assistants. In 2011, UT Arlington was notified that the NEH grant application was successful, but that the maximum award had

been reduced from \$400,000 to \$300,000. The grant period was September 1, 2011 through August 30, 2013.

Lessons Learned:

In 2003, it was very apparent that our acetate film negatives were deteriorating in the existing environmental storage conditions. Special Collections staff began testing with A-D strips to track the extent of the degradation over a period of years to demonstrate the urgency of our situation. Cold storage options were researched, including site visits to the Amon Carter Museum and the Harry Ransom Center at UT Austin, accompanied by persistent queries so graciously fielded by their staff. We were successful in integrating plans for cold storage into the Libraries' strategic plan, garnering library-wide consensus that the condition of our negatives was perilous and worthy of intervention. The strategic plan task force drafted a survey sent to numerous repositories in the U.S. and Canada operating a cold storage vault, seeking information about vault design, operations, and consultant team members. Consultants Sarah Wagner and Bill Lull (Garrison/Lull) were contracted to make a site visit and report their recommendations for a cold storage vault location and design parameters. Two Special Collections staff members attended the Image Permanence Institute's week-long photograph identification and preservation workshop at the George Eastman House in Rochester, New York, which opened a line of communication with IPI director Jim Reilly and chemist Doug Nishimura. Extensive time was allocated to write our grant proposal. We took advantage of pre-review offered by the NEH, which helped us fine tune our request. Ultimately we were successful in our grant application. We did our homework in a methodical manner; were able to demonstrate the national significance of our collections; had a plan worthy of funding; and now our dream of cold storage is becoming reality.

Project Activities:

On April 30, 2013, UT Arlington requested a two year no cost extension to our NEH grant. The project suffered a setback due to the death of Larry Harrison, University Director of Facilities Management. Facilities Management placed the project on hold until all necessary additional funds could be raised. The construction plans were complete and paid in full, the space to be used for the cold vault construction had been cleared and readied for construction. The extension was granted through August 31, 2015. While the UT Arlington Development Office was successful in raising significant funding from private foundations and corporations for the cold storage project, we were still short of our goal. In summer 2014, the decision was made to move ahead with the \$783,000 funds in hand -- the NEH grant, private foundation and corporate support, and university and library funds. The plans went out to bid in September 2014 and construction began in November 2014.

G.W. "Bill" Poole, Assistant Vice President of Facilities Management, stepped in to Larry Harrison's previous role. He worked to modify the plans to the vault to reduce the cost without sacrificing the size or the integrity of the project. The decision was made to increase the operating temperature of the cold vault from 35° to 38°F, $\pm 3^\circ$ (also used by the National

Archives, UT Austin Ransom Center, and UC Berkeley Bancroft Library), and the cool vault from 55° to 60°F ± 3°, accommodating a modification in its mechanical system. Consultant Sarah Wagner approved both changes. Poole also determined that the mechanical room was too small, and enlarged the project floor plan to accommodate a larger mechanical room and office, while maintaining the size of the old and cool storage vaults. (See Appendices 1 and 2.) As in any project constructed in existing space, unexpected situations arise requiring plan modifications. In our project, it was determined because the basement concrete floor was not sitting on solid ground it was necessary to pour an additional 3" of concrete on the existing floor to accommodate the weight of the compact shelving.

Other personnel changes were inevitable over the four year period from the writing of the grant in 2010 to the commencement of construction in 2014: Leonard Bode retired as did Carleen Dolan. David Hayden was hired as the new Facilities and Security Director for the Libraries. Ann Hodges left UT Arlington in August 2014 to become Special Collections Librarian and University Archivist at Texas A&M University Corpus Christi, at which time Brenda McClurkin stepped into her role as Project Director and Principal Investigator. UT Arlington was fortunate to woo Cameron Taylor, former facilities engineer at the Amon Carter Museum in Fort Worth, to our Office of Facilities Management. Taylor brings a wealth of experience in operating the Carter Museum's cold storage vault to UT Arlington. His initial responsibility was to extend his expertise to the construction and testing of the UT Arlington cold storage project, and outline start-up and operational procedures.

Cathy Spitzenberger continues as Special Collections' Library Assistant for Photographs. Her focus during the grant period has been scanning our earliest, most vulnerable acetate negatives and nitrate negatives that will go into freezer storage. The transfer of negatives into cold storage will begin in January 2016, and will be overseen by Brenda McClurkin and our new Special Collections Archivist who will begin work January 4, 2016.

Substantial completion of the UT Arlington cold storage vault project was achieved on May 29, 2015. As of November 30, 2015, the total direct construction cost of the project is approximately \$815,000. Due to the cost overage, it is necessary that explosion-proof freezers for nitrate film storage, archival supplies, and office furnishings will be paid by Libraries, not project funds.

UT Arlington issued a press release announcing the commencement of the construction of the cold storage vault project, including the role of NEH grant funding, on August 1, 2014 (Appendix 4). The UT Arlington *MavWire* online staff newsletter was quick to pick up the story on August 7. Robert Cadwallader wrote an extensive article describing the cold storage vault project for the *Fort Worth Star-Telegram* and *Arlington Citizen Journal* (Appendix 5) published August 11. Other interesting reports of the cold storage vault turned up in the Culture Map Dallas website on August 28, and InsidePhilanthropy.com on September 28 (Appendix 6). Our cold storage vault was on tour during the May 2015 Society of Southwest Archivists annual meeting in Arlington. Visitors had a chance to see the vault

first-hand, hear the story of our how dream came true (including NEH grant support), and talk shop with Ben Bell, president of Scientific Climate Systems, cold vault contractor. A session proposal was recently submitted for the 2016 annual meeting of the Society of Southwest Archivists to explore in greater detail the reasons cold storage were needed and UT Arlington's quest to make cold storage a reality. The cold storage vault was recently highlighted in an article about Special Collections' preservation efforts in the Fall 2015 issue of *Inquiry*, UT Arlington's magazine highlighting on-campus research projects. Robert Cadwallader with the *Fort Worth Star-Telegram* has made a follow-up contact about the vault progress, but prefers to wait until content is loaded to update his story. Other promotional opportunities will be explored as the transfer of negatives progresses. Articles on the successful completion of the UT Arlington cold storage vault will be submitted to *Southwestern Archivist*, newsletter of the Society of Southwest Archivists, and other appropriate professional publications. Session proposals will also be submitted in 2016 to program committees of the Society of American Archivists and other regional archival organizations to tell our cold storage journey.

Accomplishments:

The UT Arlington Libraries cold storage vault project was completed on time. The final direct construction cost was more than anticipated, but substantially below 2010 budget estimates. We did make small adjustments (3-5°F) to the operating temperatures of the cold and cool storage vault rooms to accommodate budget constraints, all approved by consultant Sarah Wagner. The size of the cold and cool storage rooms (940 and 480 square feet, respectively) was not compromised. In fact, the mechanical room and office spaces were significantly enlarged. The explosion-proof freezers for nitrate film storage, archival supplies, and office furnishings will be paid by Libraries funds as needed.

Cameron Taylor, EMCS Supervisor, UT Arlington Office of Facilities Management, has just completed a battery of tests designed to stress the vault environment, vault enclosure, mechanical, and control systems in order to discover and develop proper response protocols that minimize risk to the collection in the event of failure. We have been given approval to begin moving negatives into the vault, a process that will begin in January 2016.

Audiences:

While the audience for the UT Arlington Libraries cold storage vault project is initially the Special Collections staff, the total impact of the project benefits UT Arlington researchers for generations to come. By creating an environment in which vulnerable and irreplaceable photographic images documenting a broad spectrum of life in North Texas are preserved, these photographic images will continue to be rich and vibrant resources to enhance the inquiry of students, scholars, authors, family historians, historic preservationists, and the public at large for hundreds of years. The UT Arlington cold storage journey has already informed a considerable number of archivists who recognize similar needs within their own repositories and hopefully will result in more photographic images being preserved for posterity.

Evaluation:

As a construction project, the progress of the cold storage vault was continuously monitored by Facilities Management architects and engineers. Substantial completion was achieved on May 29, 2015. Cameron Taylor has completed a battery of tests designed to stress the vault environment, vault enclosure, mechanical, and control systems in order to discover and develop proper response protocols that minimize risk to the collection in the event of failure. The compact shelving is in place, we are ready to load negatives into the vaults.

The reaction of the public to our cold storage vault project has been enormously positive. Headlines from articles reporting the project tell the story... *"UT Arlington joins prestigious national institutions in protecting history," "UT Arlington Central Library begins construction on cold storage vault for millions of historic photographic negatives,"* and *"What happens when digitization can't solve preservation needs? UT Arlington has an answer."* The project has been described in terms of being *"world-class"* and *"state-of-the-art,"* and offering *"a high level of environmental protection."* People love looking at photographs from the past. They tell a story... our story, and the importance of preserving these images is widely understood and supported. We deeply appreciate the financial support of the National Endowment of the Humanities, private foundations, corporations, and UT Arlington in making our cold storage vault become a reality.

The construction of the cold storage vault has been well publicized in the local press:

UT Arlington news release:

<http://www.uta.edu/news/releases/2014/08/library-cold-storage.php>

MavWire, (UT Arlington staff newsletter), August 7, 2014:

<http://www.uta.edu/ucomm/internalcommunications/mavwire/2014/aug07.php>

Fort Worth Star-Telegram/Arlington Citizen Journal, August 11, 2014:

<http://www.star-telegram.com/news/local/community/arlington-citizen-journal/article3868786.html>

Dallas Culture Map, August 21, 2014:

<http://dallas.culturemap.com/news/innovation/08-20-14-ut-arlington-cold-storage-vault-historic-photos/>

Inside Philanthropy, September 28, 2014:

<http://www.insidephilanthropy.com/higher-education/2014/9/28/what-happens-when-digitization-cant-solve-preservation-needs.html>

UTA Inquiry: The Research Magazine for the University of Texas at Arlington, Fall 2015:

<http://www.uta.edu/inquiry/fall15/features/protecting-the-past.php>.

Continuation of the Project:

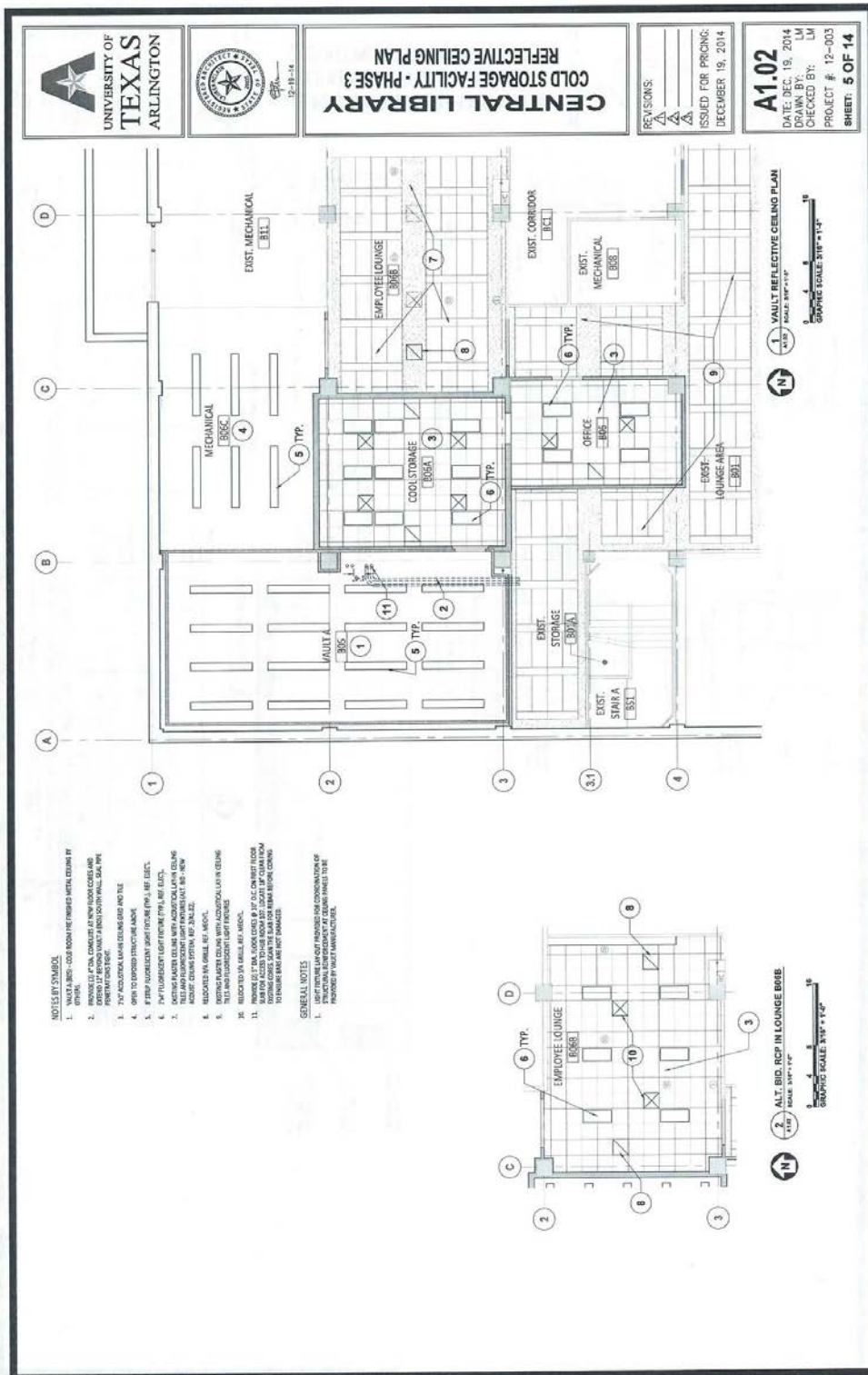
The physical construction of the UT Arlington cold storage vault is complete. We now enter the next phase of populating the vaults with photographic materials. This will be an ongoing process as the vaults were designed to accommodate current collections as well as substantial future acquisitions.

APPENDICES:

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Appendix 1: Initial Cool (A) and Cold (B) Vault Floor Plans, 2010



Appendix 2: Revised Cool and Cold Storage Vault
Floor Plan with Extended Office, 2014



Cold Storage Vault area in the basement of the Central Library. Entrance to cold storage is on the left. Double doors directly ahead lead into the staff lounge, then into the mechanical room.

May 22, 2015



Cool Storage Vault, looking into the Cold Storage Vault. Monitoring panel is on the left.

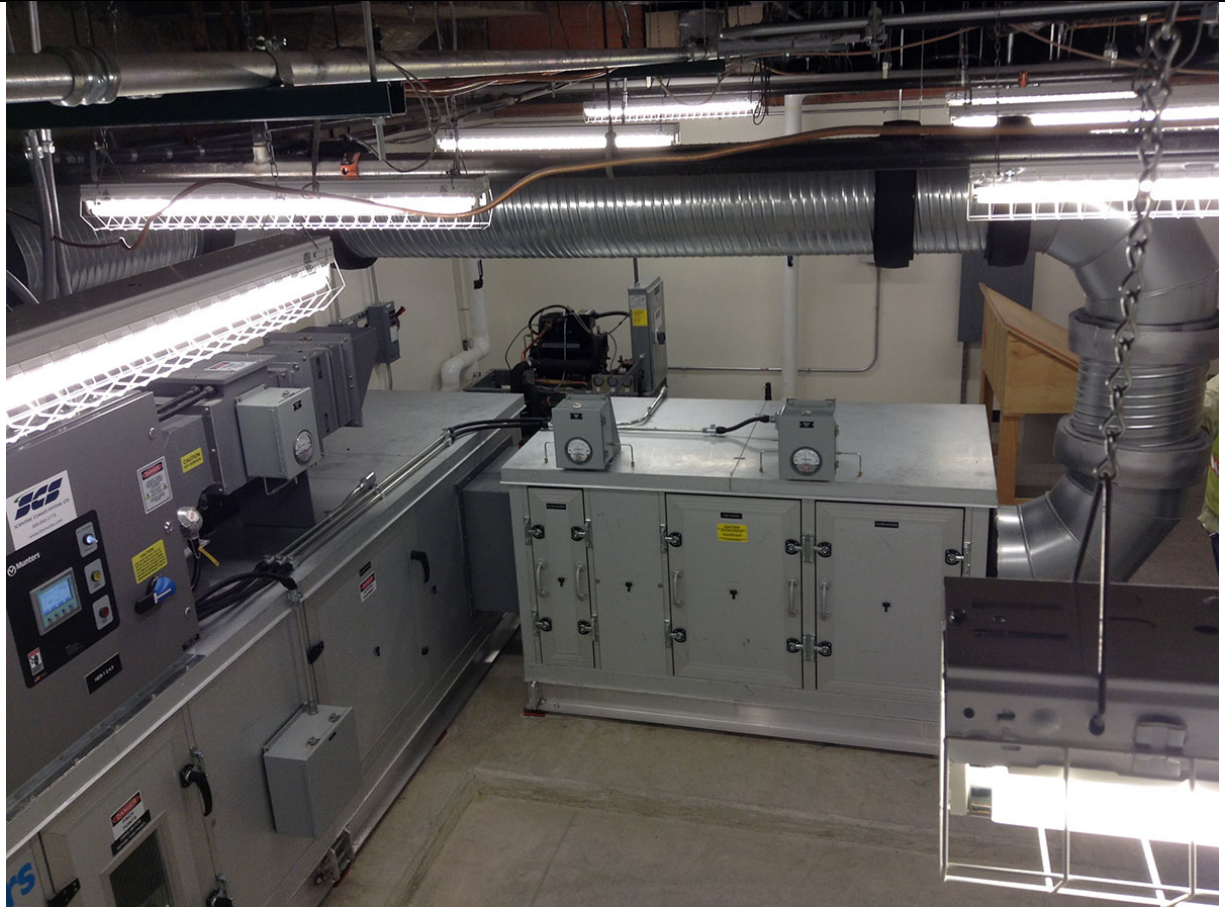
May 22, 2015

Appendix 3A: Photographs of the UT Arlington Cool and Cold Storage Vaults.



Cold Storage Vault compact shelving being installed, May 6, 2015.

Appendix 3B: Photographs of the UT Arlington Cool and Cold Storage Vaults.



Cold vault mechanical room equipment installed by Scientific Climate Systems, May 1, 2015.

Appendix 3C: Photographs of the UT Arlington Cool and Cold Storage Vaults.

Fort Worth Star-Telegram negatives suffering from vinegar syndrome.



Appendix 3D and 3E: Photographs from the *Fort Worth Star-Telegram* (above) and W.D. Smith (next page) collections exhibiting vinegar syndrome degradation.

8x10 W.D. Smith acetate negative exhibiting vinegar syndrome.



NEWS CENTER

UT Arlington Central Library begins construction on cold storage vault for millions of historic photographic negatives

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Construction begins next week on a world-class cold storage preservation vault at The University of Texas at Arlington Central Library. The facility will house approximately 5 million photographic negatives.



UTA Library cold storage will preserve millions of photo negatives.

The Libraries' Special Collections documents more than 150 years of North Texas history and is one of the largest in the country. Among the more notable holdings are the archives of the *Fort Worth Star-Telegram*, the J. W. Dunlop collection of historic Arlington images, the W. D. Smith collection of Fort Worth images, and the Basil Clemons collection documenting the oil boom town of Breckenridge, Texas.

Photographs from the Special Collections holdings have appeared in books, documentaries and magazines around the world and are used daily by scholars, researchers, filmmakers, historians and others.

Cold storage vaults typically resemble large refrigerated rooms filled with shelving units. They can be maintained at

The \$800,000 project is funded by a \$300,000 grant from the National Endowment for the Humanities and generous contributions from the Amon G. Carter Foundation, the Adeline & George McQueen Foundation, the Crystelle Waggoner Charitable Trust, the Summerfield G. Roberts Foundation and Union Pacific.

"We are excited about what this cold vault will mean as far as our ability to preserve valuable photographs and audio-visual materials for hundreds of years to come," said Rebecca Bichel, dean of the UT Arlington Libraries. "The state-of-the-art construction and high level of environmental protection will help us to answer the diverse research demands of our students, faculty, staff and other library patrons today and generations to come."

UT Arlington joins other academic institutions, major museums, governmental agencies and the film industry in constructing a cold storage facility. They include the Amon Carter Museum in Fort Worth, the Harry Ransom Center at the University of Texas at Austin, the Bancroft Library at the University of California at Berkeley, the Smithsonian Institution and Library of Congress.

11/30/2015 UT Arlington Central Library begins construction on cold storage vault for millions of historic photographic negatives - News Center - UT Arlington

temperatures slightly above freezing (35°F) to accommodate access and reduce energy costs. UT Arlington's vault will be more than 680 square feet. Cold storage significantly delays the deterioration rate of negatives.

Brenda McClurkin, head of Special Collections at UT Arlington, said in conventional office conditions, new film negatives begin to deteriorate after 50 years. When negatives are stored in a cold storage vault, their life is extended some 450 years.

"While the Libraries are actively digitizing their collections, digitization alone does not solve the problem of preservation," McClurkin said. "Digitizing the collection would take millions of dollars and many years. Even if we had the money, the negatives would continue to deteriorate faster than we can scan them."

The cold storage facility will be located in the basement of the Central Library and is expected to be fully functional in 2015.

Contact Brenda McClurkin, mcclurkin@uta.edu for more information.

About UT Arlington

The University of Texas at Arlington is a comprehensive research institution and the second largest institution in The University of Texas System. *The Chronicle of Higher Education* ranked UT Arlington as the seventh fastest-growing public research university in 2013. *U.S. News & World Report* ranks UT Arlington fifth nationally for providing a racially and ethnically diverse campus. *Military Times* ranked UT Arlington one of the nation's best universities for military veterans, and *PayScale.com* ranked UT Arlington eleventh nationally among public and private colleges and universities in Texas that provide the best College Return on Investment. More than 5,000 students live on campus in residence halls and on-campus apartments. More than 10,000 live within five miles of campus. Visit www.uta.edu to learn more.

This news release was updated on Aug. 14, 2014.

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For The Media

Contact Media Relations

Appendix 4B: UT Arlington News Release August 1, 2014

ARLINGTON CITIZEN-JOURNAL AUGUST 11, 2014

UT Arlington to break ground on \$1 million cold storage facility for photo archives

HIGHLIGHTS

The underground vault will house the collections' current holdings of 5 million negatives and leave room for expansion, officials say.

By Robert Cadwallader - rcadwallader@star-telegram.com

It was a decade ago when a whiff of vinegar on the sixth floor of UT Arlington's Central Library set off alarm bells for the keepers of the special collections, a vast resource for North Texas history.

That acrid odor meant just one thing: Some of the collections' closely guarded film negatives were deteriorating right under their noses.

The discovery triggered a campaign to research, design and find funding for what officials considered the only logical solution — a cold storage facility.

This week, the project breaks ground on a \$1 million restructuring of the library basement to create a 680-square-foot vault cooled to 38 degrees in perpetuity.

The vault will house the collections' current holdings of 5 million negatives and leave room "for more than minimal growth," said Brenda McClurkin, now head of special collections. Her nose was among the first to notice the telltale vinegary odor at the library.

The smell is a byproduct of the breakdown of acetate film. It releases acetic acid, the key ingredient in vinegar and the source of its odor.

"As those negatives were retested over a period of several years, we could see that the degradation was advancing," McClurkin said. "Degradation previously found in 1930s and 1940s vintage film negatives was spreading into early 1950s-era negatives. A growing number were in critical condition, needing immediate cold storage."

Film negatives start deteriorating after about 50 years, but the planned storage vault should extend their lives to around 450 years, she said.

The University of Texas at Arlington project has been awarded \$300,000 by the National Endowment for the Humanities. Funds have also come from several foundations as well as from the library and the university.

Construction is set to finish next year, and then the facility will undergo six to 12 months of empty-shelf operation to test the cooling and monitoring systems, officials said.

Cold storage is not a new idea. Major universities, museums and other institutions have built refrigerated facilities for preserving negatives, photo prints, documents, artwork and other materials for posterity.

The Amon Carter Museum of American Art in Fort Worth built a 2,900-square-foot cold storage facility as part of an expansion of the museum building from 1999 to 2001. The storage is divided into two main sections with two different temperatures, said John Rohrbach, the museum's senior curator of photographs. About 250,000 items are currently chilled.

The 600-square-foot "cold room" stays at 20 degrees and houses all of the plastic film negatives and a type of color prints. The 2,200-square-foot "cool room" is kept at a relatively balmy 60 degrees to preserve the main part of the museum's photo collection — mostly black-and-white prints along with certain color prints.

A small vestibule between the two refrigerated rooms allows for negatives retrieved from the cold room to warm up without creating condensation.

The cool room also holds glass plate negatives, which can be damaged by subfreezing temperatures, Rohrbach said. But he expects that the cold room will preserve its negatives for close to a millennium.

Appendix 5A: Arlington Citizen Journal article by
Robert Cadwallader, August 11, 2015

"As institutions recognize the value of cold storage, they're doing it," he said. "But they're expensive systems. They're built on collection needs and financial capabilities."

Founded in 1974, UTA special collections is a trove of photographs, family papers, maps and many other materials that help document more than 150 years of North Texas history. Its first photography collection, of the works of Basil Clemons, was donated in 1985.

In 1987, the collections became the official repository of the *Fort Worth Star-Telegram*, which has donated about 4 million negatives that will occupy most of the new vault.

Other negatives earmarked for cold storage include the W.D. Smith Collection of images of historic Fort Worth buildings and architecture, and J.W. Dunlop's anthology of Arlington images dating to the late 1800s, said Rebecca Bichel, dean of UT Arlington Libraries.

But she also holds hope for the negatives severely damaged by "vinegar syndrome" and currently rendered unusable. As is the hope in cryogenics, cold storage of film negatives could suspend deterioration for centuries as science hunts for a cure.

"We want to preserve with the hope that as techniques continue to develop that we can recover more images," Bichel said. "Who knows what technological capabilities we will have in 10 years, even 50 years?"



MORE ARLINGTON CITIZEN-JOURNAL

Appendix 5B: *Arlington Citizen Journal* article by
Robert Cadwallader, August 11, 2015

Sunday
Sep282014

What Happens When Digitization Can't Solve Preservation Needs? UT Arlington Has an Answer.

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We hate to spoil the party, but — brace yourselves — sometimes technology can't solve all of our problems. (We felt compelled to mention this to the

hordes of people lining up around the block for the new iPhone, but common sense got the better of us.)

We mention this harsh reality — with a tinge of sarcasm, of course — because we all, every now and then, fall prey to the siren call of technology and its promise to "make our lives easier." Nonprofit organizations and academic institutions are no exceptions to this rule. A new piece of technology is introduced, adoption sky-rockets, and suddenly everyone is shelling out finite dollars for a solution that may in fact, not be much of solution after all. Take the idea of digital archiving, for example. Now don't get us wrong, digital archiving is a godsend for any institution or organization faced with towering boxes of files, photographs, and media accumulating in basements and storage closets. And people would be forgiven to assume that digital technology is the optimal solution for their archiving needs. For some organizations that is the case. For others, not so much.

According to Brenda McClurkin, head of Special Collections at the University of Texas Arlington, "Digitization alone does not solve the problem of preservation. Digitizing [our] collection would take millions of dollars and many years. Even if we had the money, the negatives would continue to deteriorate faster than we can scan them."

She should know. McClurkin and UT Arlington just received a \$300,000 grant from the National Endowment for the Humanities, along with generous contributions from the Amon G. Carter Foundation and other foundations to create a world-class cold storage preservation vault at UT Central Library. The \$800,000 project will create a facility that will house approximately 5 million photographic negatives.

UT joins other academic institutions, major museums, governmental agencies and the film industry in constructing a cold storage facility. They include the Amon Carter Museum in Fort Worth, the Harry Ransom Center at the University of Texas at Austin, the Bancroft Library at the University of California at Berkeley, the Smithsonian Institution and Library of Congress.

So what should organizations take away from this news? Simple: A cursory inventory of one's academic or archival holdings will likely suggest which course of action is appropriate. UT's Special Collections Library contains documents and photographs spanning 150 years. As McClurkin noted, digitizing them all is impractical and costly, whereas negatives stored in a cold storage vault will extend their life by some 450 years.

On the other hand, organizations with less quantity (and a smaller budget) should consider a more digitized approach. To that end, check out IP's take on the Martha Graham School of Dance's efforts (with the help from Mellon) [here](#) and the New York Philharmonic's work (with help from the Leon Levy Foundation) [here](#).

Sunday, September 28, 2014 at 03:13PM

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Appendix 6: *Inside Philanthropy*, September 28, 2014.